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Reduced eastern tropical Atlantic sea surface temperature variability at the end of the Green Sahara

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Mid-Holocene proxy evidence records profound climatic changes, including alteration of the West African Monsoon system and the end of the 'Green Sahara' period. Model simulations have related changes in the West African Monsoon system, which controls present-day seasonal hydroclimate over much of the African continent north of the equator, to alterations of the tropical Walker circulation. Here we investigate the change in tropical sea surface temperature variability in the eastern tropical Atlantic, where ocean-atmosphere coupling is robust. Through analysis of the distribution of oxygen isotopes from the tests of individual specimens of the surface-dwelling foraminifer *Globigerinoides ruber*, we find that SST variability is significantly decreased at the end of the Green Sahara period ~3.5-5kya. During the period of reduced variability we also observe changes in the background state of the tropical Atlantic as characterized by the east-west SST gradient, linking variability to background conditions. We compare our record to co-eval records of tropical Pacific variability that describe changes to the El Niño Southern Oscillation, as well as to records of hydroclimate change in Southeast Asia, and find similarities in these records, suggesting a common origin of these climate signals. Taken together, this evidence points toward an alteration of the tropical Walker circulation which may, in part, be related to changes in vegetation and dust loading occurring during the drying of the Sahara at mid-Holocene.